

WHAT IS CLAIMED IS:

1. A position referencing system comprising:
a plurality of spaced apart color elements attached to a static structure;
means attached to a movable structure for detecting one of said spaced apart color elements; and
means for determining a position of said movable structure from said detected color element.
2. A position reference system according to claim 1, wherein said static structure is an elevator hoistway and said movable structure is an elevator car.
3. A position referencing system according to claim 2, wherein said detecting means comprises at least one camera for determining the color of said detected color element and for detecting a top edge and a bottom edge of said detected color element.
4. A position referencing system according to claim 3, wherein each said color element reflects a unique wavelength of the electromagnetic spectrum.
5. A position referencing system according to claim 3, wherein said at least one camera is mounted to a side of said elevator car, said static structure is a door frame in said hoistway, and said plurality of spaced apart color elements comprises a plurality of differently colored elements attached to said door frame.
6. A position referencing system according to claim 3, wherein said detecting means detects a plurality of unique color components of said detected color element and said determining

means selects one of said plurality of unique color components as a positioning color, normalizes the remaining ones of said plurality of unique color components with respect to the positioning color, determines a decoded number for the detected color element from said normalized ones of said plurality of unique color components, and identifies the detected color element from the decoded number.

7. A position referencing system according to claim 3, wherein said detecting means further comprises a linear radiation source for illuminating said detected one of said color elements and a camera apparatus.
8. A position referencing system according to claim 7, wherein said camera apparatus comprises a CCD camera.
9. A position referencing system according to claim 8, wherein said CCD camera comprises a CCD sensor, lens, and light guide.
10. A position referencing system according to claim 3, wherein said detecting means comprises a first camera apparatus attached to a first part of said elevator car and a second camera apparatus attached to a second part of said elevator car and wherein said first and second camera apparatus operate independently to provide redundant speed and position information.
11. A position referencing system according to claim 1, wherein said static structure is a transport guideway and said movable structure is a passenger cab.
12. A position referencing system according to claim 11, wherein said detecting means comprises at least one camera for determining the color of said detected color element and for

detecting a top edge and a bottom edge of said detected color element.

13. A position referencing system according to claim 12, wherein said color element reflects a unique wavelength of the electromagnetic spectrum.

14. A position referencing system according to claim 12, wherein said at least one camera is mounted to a side of said passenger cab, said static structure is a door frame in said transport guideway, and said plurality of spaced apart color elements comprises a plurality of differently colored elements attached to said door frame.

15. A position referencing system according to claim 12, wherein said detecting means detects a plurality of unique color contents of said detected color element and said determining means selects one of said plurality of unique color components as a positioning color, normalizes the remaining ones of said plurality of unique color components with respect to the positioning color, determines a decoded number for the detected color element from said normalized ones of said plurality of unique color components, and identifies the detected color element from the decoded number.

16. A position referencing system according to claim 12, wherein said detecting means comprises a linear radiation source for illuminating said detected one of said color elements and a camera apparatus.

17. A passenger transport position referencing system according to claim 16, wherein said camera apparatus comprises a CCD camera.

18. A passenger transport position referencing system according to claim 17, wherein said CCD camera comprises a CCD sensor, lens, and light guide.
19. A passenger transport position referencing system according to claim 12, wherein said detecting means comprises a first camera apparatus attached to a first part of said passenger cab and a second camera apparatus attached to a second part of said passenger cab and wherein said first and second camera apparatus operate independently to provide redundant speed and position information.
20. A method for determining the position of a movable structure comprising the steps of:
 - attaching a plurality of spaced apart color elements to a static structure;
 - detecting one of said spaced apart color elements using a sensing device attached to said movable structure; and
 - determining a position of said movable structure from said detected color element.
21. A method according to claim 20, wherein said detecting step comprises illuminating said color element with a radiation source and capturing a reflected image with a sensing device.
22. A method according to claim 20, wherein said detecting step comprises capturing a reflected color light image containing a plurality of primary colors and said determining step comprises selecting one of said primary colors as a positioning color and normalizing the remaining colors with respect to said positioning color.

23. A method according to claim 22, wherein said position determining step comprises determining a decode number for said color element and from said decode number identifying said color element and determining the position of said moveable structure.